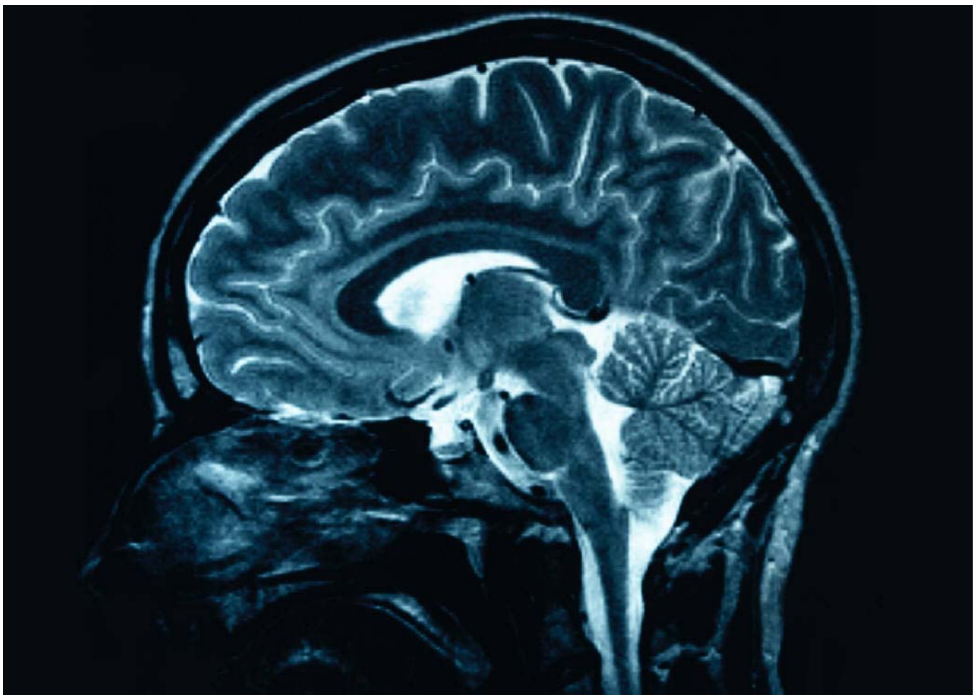
Stroke



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Introduction

Stroke is a type of cardiovascular disease. It affects the arteries leading to and within the brain. A stroke occurs when a blood vessel that carries oxygen and nutrients to the brain is either blocked by a clot or bursts. When that happens, part of the brain cannot get the blood (and oxygen) it needs, so it starts to die.

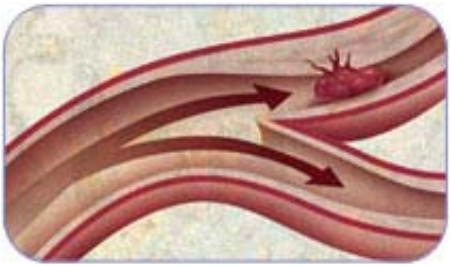
- About 700,000 Americans each year suffer a new or recurrent stroke. That means, on average, a stroke occurs every 45 seconds
- Stroke kills nearly 163,000 people a year. That's about 1 of every 15 deaths. It is the third leading cause of death behind diseases of the heart and cancer
- About every 3 minutes someone dies of stroke.

Types of Stroke

Ischemic

Ischemic stroke accounts for about 83 percent of all cases.

Ischemic strokes occur as a result of an obstruction within a blood vessel supplying blood to the brain. The underlying condition for this type of obstruction is the development of fatty deposits lining the vessel walls. This condition is called atherosclerosis. These fatty deposits can cause two types of obstruction:



Cerebral thrombosis refers to a thrombus (blood clot) that develops at the clogged part of the vessel.

Cerebral embolism refers generally to a blood clot that forms at another location in the circulatory system, usually the heart and large arteries of the upper chest and neck. A portion of the blood clot breaks loose, enters the bloodstream and travels through the brain's blood vessels until it reaches vessels too small to let it pass. A second important cause of embolism is an irregular heartbeat, known as atrial fibrillation. It creates conditions where clots can form in the heart, dislodge and travel to the brain.

Hemorrhagic

Hemorrhagic stroke accounts for about 17 percent of stroke cases.

It results from a weakened vessel that ruptures and bleeds into the surrounding brain. The blood accumulates and compresses the surrounding brain tissue. The two types of hemorrhagic strokes are intracerebral hemorrhage or subarachnoid hemorrhage.

Hemorrhagic stroke occurs when a weakened blood vessel ruptures. Two types of weakened blood vessels usually cause hemorrhagic stroke: aneurysms and arteriovenous malformations (AVMs).

An *aneurysm* is a ballooning of a weakened region of a blood vessel. If left untreated, the aneurysm continues to weaken until it ruptures and bleeds into the brain.

An *arteriovenous malformation* (AVM) is a cluster of abnormally formed blood vessels. Any one of these vessels can rupture, also causing bleeding into the brain.

Transient Ischemic Attacks

Also called TIAs, transient ischemic attacks are minor or warning strokes. In a TIA, conditions indicative of an ischemic stroke are present and the typical stroke warning signs develop. However, the obstruction (blood clot) occurs for a short time and tends to resolve itself through normal mechanisms.

Even though the symptoms disappear after a short time, TIAs are strong indicators of a possible major stroke. Steps should be taken immediately to prevent a stroke.

Know the Warning Signs of Stroke

Stroke is a medical emergency. Know these warning signs of stroke and teach them to others. Every second counts:

- **Sudden** numbness or weakness of the face, arm or leg, especially on one side of the body
- **Sudden** confusion, trouble speaking or understanding
- **Sudden** trouble seeing in one or both eyes
- **Sudden** trouble walking, dizziness, loss of balance or coordination
- **Sudden** severe headache with no known cause

Stroke is an Emergency! Call 9-1-1 immediately if you experience symptoms! Time lost is brain lost!

Stroke Risk Factors

Risk factors are traits and lifestyle habits that increase the risk of disease. Extensive clinical and statistical studies have identified several factors that increase the risk of stroke. Most of them can be modified, treated or controlled. Some cannot.

The more risk factors you have, the higher your chances of having a stroke. The best way to prevent a stroke is to reduce your stroke risk factors. A healthcare provider can help you change factors that result from lifestyle or environment.

What risk factors for stroke can be controlled or treated?

- **High blood pressure** — High blood pressure (140/90 mm Hg or higher) is the most important risk factor for stroke. It usually has no specific symptoms and no early warning signs. That's why everybody should have their blood pressure checked regularly.
- **Tobacco use** — Cigarette smoking is a major, preventable risk factor for stroke. The nicotine and carbon monoxide in tobacco smoke reduce the amount of oxygen in your blood. They also damage the walls of blood vessels, making clots more likely to form. Using some kinds of birth control pills combined with smoking cigarettes greatly increases stroke risk
- **Diabetes mellitus** — Diabetes is defined as a fasting plasma glucose (blood sugar) of 126 mg/dL or more measured on two occasions. While diabetes is treatable, having it still increases a person's risk of stroke.
- **Carotid or other artery disease** — The carotid arteries in your neck supply blood to your brain. A carotid artery narrowed by fatty deposits from atherosclerosis (plaque buildups in artery walls) may become blocked by a blood clot. Carotid artery disease is also called carotid artery stenosis.
    - People with **peripheral artery disease** have a higher risk of carotid artery disease, which raises their risk of stroke. Peripheral artery disease is the narrowing of blood vessels carrying blood to leg and arm muscles. It's caused by fatty buildups of plaque in artery walls.
- **Atrial fibrillation** — This heart rhythm disorder raises the risk for stroke. The heart's upper chambers quiver instead of beating effectively, which can let the blood pool and clot. If a clot breaks off, enters the bloodstream and lodges in an artery leading to the brain, a stroke results.
- **Other heart disease** — People with coronary heart disease or heart failure have a higher risk of stroke than those with hearts that work normally. Dilated cardiomyopathy (an enlarged heart), heart valve disease and some types of congenital heart defects also raise the risk of stroke.

- **Transient ischemic attacks (TIAs)** — TIAs are "warning strokes" that produce stroke-like symptoms but no lasting damage. Recognizing and treating TIAs can reduce your risk of a major stroke.
- **Certain blood disorders** — A **high red blood cell count** thickens the blood and makes clots more likely. This raises the risk of stroke. Doctors may treat this problem by removing blood cells or prescribing "blood thinners."
- **Sickle cell disease** (also called sickle cell anemia) is a genetic disorder that mainly affects African Americans. "Sickled" red blood cells are less able to carry oxygen to the body's tissues and organs. They also tend to stick to blood vessel walls, which can block arteries to the brain and cause a stroke.
- **High blood cholesterol** — A high level of total cholesterol in the blood (240 mg/dL or higher) is a major risk factor for heart disease, which raises your risk of stroke. Recent studies show that high levels of LDL ("bad") cholesterol (greater than 100 mg/dL) and triglycerides (blood fats, 150 mg/dL or higher) increase the risk of stroke in people with previous coronary heart disease, ischemic stroke or transient ischemic attack (TIA). Low levels (less than 40 mg/dL for men; less than 50 mg/dL for women) of HDL ("good") cholesterol also may raise stroke risk.
- **Physical inactivity and obesity** — Being inactive, obese or both can increase your risk of high blood pressure, high blood cholesterol, diabetes, heart disease and stroke. So go on a brisk walk, take the stairs, and do whatever you can to make your life more active. Try to get a total of at least 30 minutes of activity on most or all days.
- **Excessive alcohol** — Drinking an average of more than one alcoholic drink a day for women or more than two drinks a day for men can raise blood pressure and may increase risk for stroke.
- **Some illegal drugs** — Intravenous drug abuse carries a high risk of stroke. Cocaine use has been linked to strokes and heart attacks. Some have been fatal even in first-time users.

What are the risk factors for stroke you can't change?

- **Increasing age** — People of all ages, including children, have strokes. But the older you are, the greater your risk for stroke.
- **Sex (gender)** — Stroke is more common in men than in women. In most age groups, more men than women will have a stroke in a given year. However, women account for more than half of all stroke deaths.
- **Heredity (family history) and race** — Your stroke risk is greater if a parent, grandparent, sister or brother has had a stroke. African Americans have a much higher risk of death from a stroke than Caucasians do; partly because African Americans have higher risks of high blood pressure, diabetes and obesity.
- **Prior stroke or heart attack** — Someone who has had a stroke is at much higher risk of having another one. Individuals that have had a heart attack also have an increased risk for stroke.

Stroke Prevention--What You Can Do

Eat a Healthy Diet

Healthy food habits can help you reduce three risk factors for heart attack and stroke — high blood cholesterol, high blood pressure and excess body weight. The American Heart Association Eating Plan for Healthy Americans outlines a healthy diet. It's based on these dietary guidelines, which are easier to follow than you may think:

- Eat five or more servings per day of fruits and vegetables.
- Eat six or more servings per day of grain products, including whole grains.
- Eat fish at least twice a week, particularly fatty fish, such as mackerel, lake trout, herring, sardines, albacore
  tuna and salmon.
- Include fat-free and low-fat milk products, legumes (beans), skinless poultry and lean meats.
- Choose fats and oils with 2 grams or less of saturated fat per serving (1 tablespoon). Examples are liquid and tub margarines, and canola, olive, corn, safflower and soybean oils.
- Limit your intake of foods high in calories or low in nutrition, including high-sugar foods like soft drinks and candy.
- Limit foods high in saturated fat, trans fat and/or cholesterol. Examples include full-fat milk products, fatty meats, tropical oils, and partially hydrogenated vegetable oils. Egg yolks are high in cholesterol.
- Eat less than 6 grams of salt per day. That's equal to about 1 teaspoon of salt.

Exercise Regularly

Balance the number of calories you eat with those you use up each day, to maintain your best weight. Walk or do other physical activities for at least 30 minutes on most or all days. To lose weight, use up more calories than you eat every day. But before you start, check with your doctor.

Know Your Blood Pressure

High blood pressure may not have any symptoms. The only way you will know if your pressure is high is to have it checked. If it is high, you may be able to reduce it with diet and exercise, but if that doesn't work, medication will likely be necessary. If you take medication, take it exactly as prescribed.

Stop Smoking
There are many benefits to giving up tobacco. If you or a loved one need an incentive to quit, check out some of the toxic substances in cigarette smoke.

Resources

American Heart Association
www.americanheart.org

American Stroke Association
www.strokeassocation.org

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